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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/006,875 | 12/05/2001 | Paul Martin | 12801.0083.NPUS02 TEXS:08 | 5118 |
| 26361 | 7590 | 02/21/2006 | EXAMINER | |
| STEPHEN H. CAGLE HOWREY, SIMON, ARNOLD & WHITE, LLP 750 BERING DRIVE HOUSTON, TX 77057 | | | NECKEL, ALEXA DOROSHENK | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1764 | |

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,875

Applicant(s)

MARTIN ET AL.

Examiner

Alexa D. Neckel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 6-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/15/02; 7/19/02; 7/29/02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 6-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 22, 2005.
2. Applicant's election with traverse of claims 1-5 and 13-24 in the reply filed on July 22, 2005 is acknowledged. The traversal is on the ground(s) that the inventions do not have separate utility. This is not found persuasive because Invention I can be used in another process which does not produce hydrogen or involve fuel processing (utilities of Invention II), such as exhaust gas cleaning, thereby establishing a separate utility.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: In figure 1, reference character "P" and in figure 2, reference character "101". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be

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labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method for Heating Catalyst for Start-Up.

Information Disclosure Statement

5. The references listed on the IDS received May 15, 2002 have been lined through as they are duplicate listings of references on the IDS received July 19, 2002.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 16, 17, 19, 20 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshizaki et al. (5,582,805).

With respect to claims 1, 16, 17, 22 and 23 Yoshizaki et al. discloses a method for heating a catalyst bed comprising:

having a catalyst bed (44) having an upstream face and downstream face with an electrical heating element (44/45) along one face (col. 15, lines 4-6);

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passing reactants through the heating element and catalyst bed (col. 10, lines 28-44); and

heating the electrical element to heat the catalyst bed for start up (col. 1, lines 13-16).

With respect to claim 2, Yoshizaki et al. further discloses wherein the heating element can be along the upstream face (col. 15, lines 4-6).

With respect to claim 3, Yoshizaki et al. further discloses wherein the heating element can be formed in any shape, including a winding shape (col. 15, lines 13-15; figure 9).

With respect to claims 4 and 20, Yoshizaki et al. further discloses wherein the catalyst is a monolith (col. 1, lines 18-23 and figure 16).

With respect to claim 5, Yoshizaki et al. further discloses wherein the catalyst can be platinum on an activated alumina carrier (col. 1, lines 18-23). This catalyst is known (an disclosed herein) to operate as an oxidation catalyst as well as a reforming catalyst.

With respect to claims 18 and 24, Yoshizaki et al. further discloses wherein the heating of the catalyst is determined and controlled during operation (col. 46, lines 44-46).

With respect to claim 19, Yoshizaki et al. further discloses wherein the electrical heating element (110) is weaved through the catalyst bed (figure 20, 22, and 32).

8. Claims 13, 14, 16, 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bayer et al. (5,562,885).

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With respect to claims 13, 14, 16, 17, 19 and 20, Bayer et al. teaches a method of heating a monolithic catalyst bed (13/80) by providing an electrical heating element in a coil (84, figure 5) located substantially within the catalyst bed (col. 7, lines 37-54; figure 5); and

heating the element , thereby heating the catalyst, to a desired temperature for start-up (col. 1, lines 24-34).

9. Claims 16, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Brunson et al. (5,512,251).

With respect to claims 16, 17 and 20, Brunson et al. discloses a method for heating a monolithic catalyst bed (col. 2, lines 15-30 and col. 7, lines 43-59) to start-up temperature with an electrical heating element (col. 1, lines 4-11 and col. 2, lines 15-20).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayer et al. (5,562,885).

With respect to claims 15 and 18, Bayer et al. discloses all of the steps as discussed with respect to claims 15 and 16 above, as well as the high efficiency

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achieved by the rapid and uniform heating of the catalytic converter (col. 7, line 65- col. 8, line 1), but fails to explicitly disclose heating during transient operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide heat, as needed, during operation of the converter or order to further achieve high efficiency.

12. Claims 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunson et al. (5,512,251).

With respect to claims 18 and 21, Bayer et al. discloses all of the steps as discussed with respect to claim 16 above, as well as wherein the electrical heating element (42, 46) is wrapped around the monolith (figure 4, 16 and 17) and wherein gases need to make contact with hot catalyst to effect satisfactory conversion (col. 1, line 60- col. 2, line 14), but fails to disclose wherein the heater is operated at a desired temperature during transient operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide heat, as needed, during operation of the converter or order to further achieve effective and satisfactory conversion.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa D. Neckel
Primary Examiner
Art Unit 1764

February 16, 2006


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER